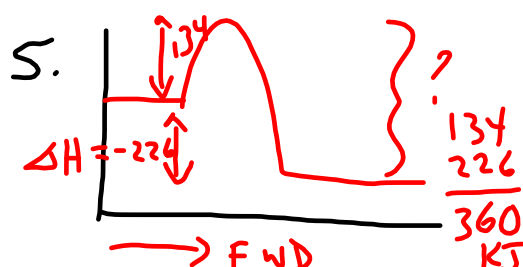
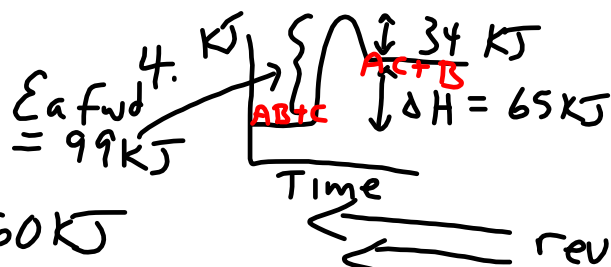


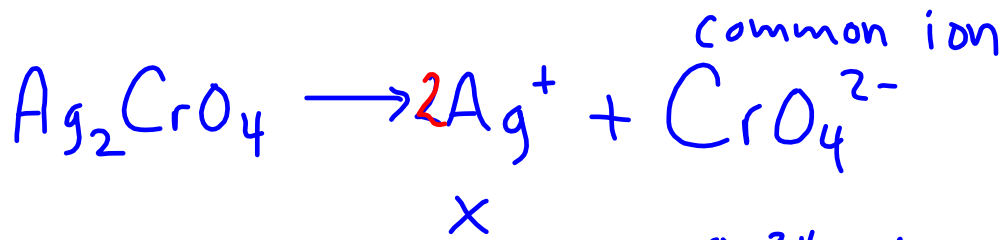
White Page - Activation Energy Practise

1. $\text{rate} = [N_2(g)][H_2(g)]^3$
 order in $N_2 = 1$ order in $H_2 = 3$
 overall order = 4

- 3.
- 80 kJ
 - 160 kJ
 - $240 - 80 = 160 \text{ kJ}$
 - 80 kJ
 - endo
 - activated complex or act. energy



5.



$$K_{sp} = [\text{Ag}^+]^2 [\text{CrO}_4^{2-}]$$

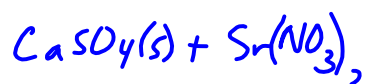
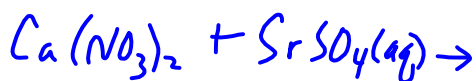
$$1.2 \times 10^{-12} = x^2 \cdot 0.34$$

$$\sqrt{\frac{1.2 \times 10^{-12}}{0.34}} = x$$

$$\sqrt{3.53 \times 10^{-12}} = x$$

$$x = 1.88 \times 10^{-6} \frac{\text{mol}}{\text{L}}$$

6.



$$K_{sp} \text{ CaSO}_4 = 2.4 \times 10^{-5}$$

$$0.4000 \text{ L} \times 0.020 \frac{\text{mol}}{\text{L}} = 0.00800 \text{ mol}$$

$$0.6000 \text{ L} \times 0.0050 \frac{\text{mol}}{\text{L}} = 0.00300 \text{ mol}$$

$$\frac{0.0080 \text{ mol}}{0.40 + 0.60 \text{ L}} \times \frac{0.0030 \text{ mol}}{0.40 + 0.60 \text{ L}} = 2.40 \times 10^{-5}$$

No prec since K_{sp} is not larger



+

$$K_{\text{sp}} \text{ZnCO}_3 = 1.0 \times 10^{-10}$$



$$0.5000 \text{ L} \times 3.9 \times 10^{-3} \text{ mol/L} = 1.95 \times 10^{-3} \text{ mol}$$

$$0.5000 \text{ L} \times 2.6 \times 10^{-3} \text{ mol/L} = 1.3 \times 10^{-3} \text{ mol}$$

$$\frac{1.95 \times 10^{-3} \text{ mol}}{0.50 + 0.50 \text{ L}} \times \frac{1.3 \times 10^{-3} \text{ mol}}{0.50 + 0.50 \text{ L}} =$$

$$\frac{1.95 \times 10^{-3}}{1 \text{ L}} \text{ mol} \times \frac{1.3 \times 10^{-3}}{1 \text{ L}} \text{ mol} = 2.47 \times 10^{-6}$$

Yes there is a precip

2.47×10^{-6} is larger than K_{sp} of 1.0×10^{-10}